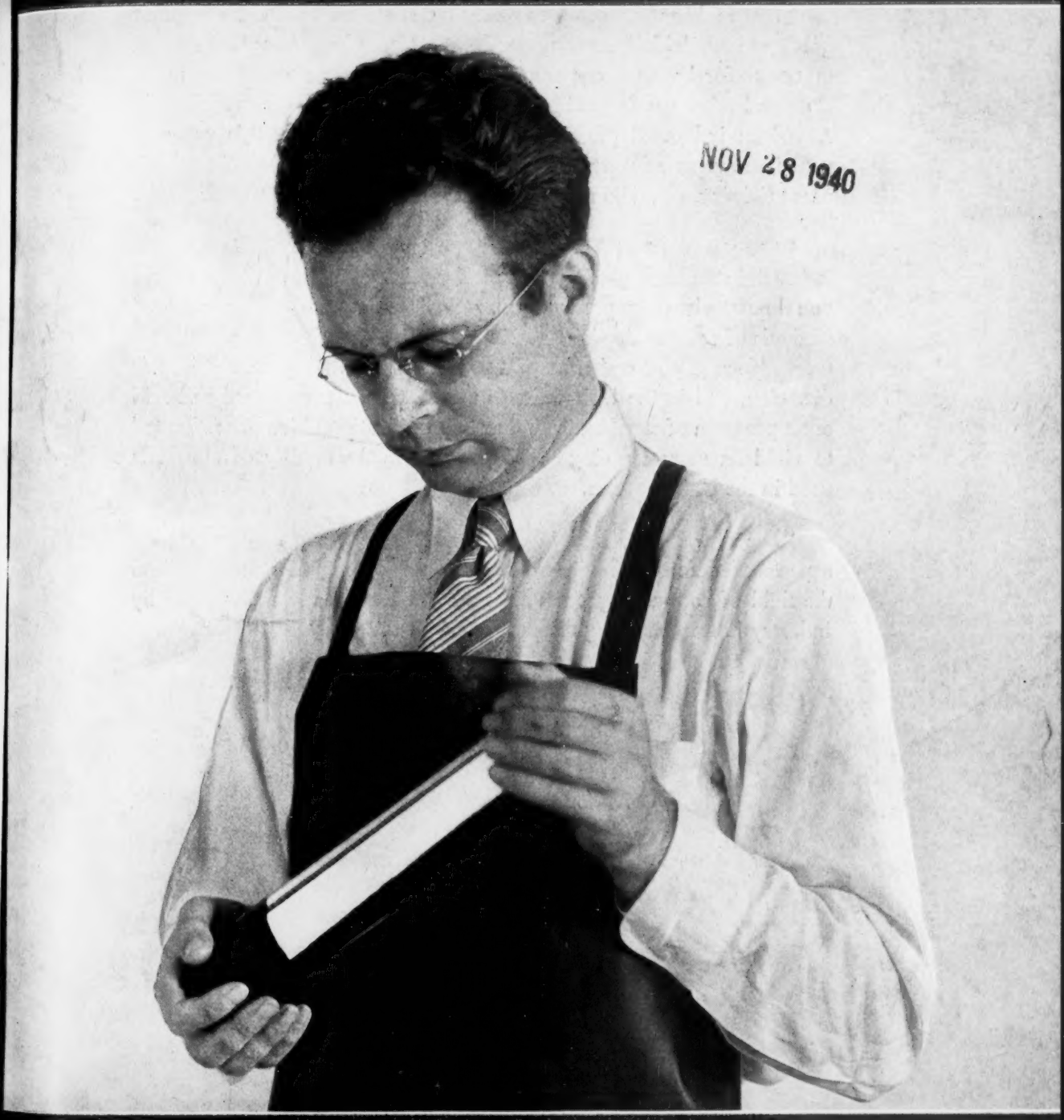
Industrial Standardization

and Commercial Standards Monthly



November

Proposed Method for Determining Speed of Film

(See Article on Page 277)

1940

"IN ORDER to maintain a real standard of living for the consumer, we must be continually concerned with the usefulness of the product for the purpose to which consumers want to put it.

"I have been surprised to find that standard tests for consumer goods are available for so few products. I have been aware, of course, that tests for both the construction and the performance of raw materials and other goods used by industry had become a commonplace in American industrial practice; and I had assumed that this practice, with its obvious advantages and its compatibility with American business efficiency, could be readily extended to the field of consumer goods.

"The precedent of World War experience with the development of industrial standards provides a basis for this expectation. As of course you know, virtually every country during the World War adopted methods of standardization and simplification of major industrial products. Toward the end of the War, the Allies had gone far in this direction, and in the United States the War Industries Board had laid out a program of standardization and simplification which was estimated to yield an annual saving of 15 per cent in the quality of materials used in the United States.

"The new stress, laid in the present emergency on the civilian aspects of defense, provides a basis for expecting the extension into the field of consumer goods of the advantages already experienced by industry in standardizing the products which it uses."

—HARRIET ELLIOTT
Consumer Member of the National Defense Advisory Commission.
From an address before the Annual Meeting of the National Consumer-Retailer Council, October 24.

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Combined with Commercial Standards Monthly

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with the cooperation of the National Bureau of Standards

RUTH E. MASON, Editor

This Issue

Our Front Cover: This picture shows the development procedure used in the proposed standard method for determining the speed of film. For best results, the developer fluid must be agitated, and this agitation, according to the proposed standard, must be equivalent to that obtained by a hand-agitated Dewar flask (shown here). The flask is fitted with a device for holding the exposed sensitometric strip. Photograph Courtesy Eastman Kodak Company.

ASA

Reg. in U. S. Pat. Off.

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

Subscription price $4.00 per year U. S. and Canada (foreign $5.00); Special to schools and libraries $2.00 (foreign $3.00); single copies 35 cents

November, 1940 Vol. 11, No. 11

ASA Committee Proposes Method For Determining Speed of Film

Proposed American Standard Specifications for Determining Photographic Speeds of Roll Films, Film Packs, and Miniature Camera Films will be published for a year's trial use

by

M. E. Russell[1]

Chairman, Subcommittee 2 on Sensitivity to Radiant Energy, of the ASA Sectional Committee on Standardization in the Field of Photography

THE American Standards Association is now publishing a proposed method for determining photographic speed of roll film, film packs, and miniature camera films. The method was drawn up by the committee on photographic standardization (Z38), whose project was discussed in a previous issue.[2] The method is being published for trial and criticism for a period of approximately one year, at the end of which time it will be considered for adoption as an American Standard.[3] If it is finally approved as an American Standard, it is expected that it may be used as a basis for recommended exposures for picture taking and for assigning speed numbers to films.

The proposed method for measuring speed is built about the following concept:

> Photographic Speed is to be considered as inversely proportional to the minimum camera exposure which a negative material must receive in order that an excellent print may be made therefrom.

This concept implies that speed can be measured by making the best possible print from each of a series of negatives (negatives which differ only in the exposure they have received) and then deciding by observation the minimum negative exposure that will lead to an excellent print. Such a concept of photographic speed seems so simple and straightforward that one might wonder why it had not been adopted years ago. The answer is that the making of picture negatives and prints to determine speed is a very unwieldy process. Besides the many difficulties in obtaining negatives properly exposed using a certain type of subject and lighting, a very large number of prints must be made and their quality judged by a large panel of judges making a multitude of observations.

Numerous systems capable of laboratory control have been proposed for measuring speed during the history of photography and several of them have enjoyed considerable popularity. Each of these systems has been designed to give results quickly and simply and with good reproducibility. Unfortunately none of them gave results which necessarily agreed with picture-taking practice. Often the discrepancy between the calculated results and those obtained by actual picture taking was so serious that photographers used the term "practical speed" to indicate that in practice the speed would be found to differ significantly from that obtained by the laboratory method.

Since the success of any method of determining photographic speed depends upon the ability to operate it with reasonable rapidity and with

[1] Eastman Kodak Company, Rochester, N. Y.

[2] "Progress Made in Photographic Standardization" by J.W. McNair, INDUSTRIAL STANDARDIZATION, Vol 10, p 293, December 1939.

[3] These proposed standard specifications will be printed in the January, 1941, issue of the Journal of the Optical Society of America and will then be available from the American Standards Association as separate pamphlets, at 25 cents per copy.

Subcommittee No. 2 on Sensitivity to Radiant Energy, which prepared the proposed standard on photographic speed of films for consideration by the ASA committee, has the following membership. The names of the individual members are followed by the organizations they represent on the sectional committee.

M.E. Russell, Eastman Kodak Company, *Chairman*

Paul Arnold, Agfa Ansco Division of General Aniline and Film Corporation

Walter Clark, American Committee of the International Congress of Photography, and Eastman Kodak Company

Raymond Davis, National Bureau of Standards, U. S. Department of Commerce

Hans Dessauer, The Haloid Company

W.N. Goodwin, Jr., National Electrical Manufacturers Association

S. McK. Gray, Electrical Testing Laboratories

Albert F. Hogle, Master Photo Finishers of America; The Photo Finishing Institute

F. K. McCune, National Electrical Manufacturers Association

Brian O'Brien, Optical Society of America

Rowland S. Potter, Defender Photo Supply Company, Inc.

E.D. Tillyer, American Optical Company

D.R. White, duPont Film Manufacturing Corporation

Other subcommittees are now at work on the program of the ASA Committee on Standardization in the Field of Photography (Z38) as follows:

Physical dimensions of sensitive materials, specifically of unexposed, unprocessed, sensitive materials and holders therefor (Subcommittee 1)

Supports for sensitive coatings (Subcommittee 3)

Exposing equipment: cameras, lenses, shutters, etc. (Subcommittee 4)

Photographic characteristics of illuminants (Subcommittee 5)

Processing equipment (Subcommittee 6)

Printing and projection equipment (Subcommittee 7)

Processing (Subcommittee 8)

Definitions; abbreviations and symbols; form and arrangement of published standards; numbering of standards (Subcommittee 9)

The Optical Society of America has the administrative leadership for the work of the ASA committee, with Loyd A. Jones as chairman, and J. W. McNair of the American Standards Association as secretary.

a high degree of reproducibility as well as agreeing with actual picture tests, it was necessary that a laboratory method be found from which the results would be the equivalent of picture taking. Within recent years such a method has been evolved in the field of sensitometry, and it is this method which is used in the proposed standard.[4] It has been found to give excellent correlation with picture-taking practice and at the same time to be a satisfactory method for laboratory manipulation.

The method consists of plotting a characteristic curve (that is, density vs log exposure) of the material being tested for a particular set of exposing and developing conditions and then determining certain constants from the characteristic curve. In the making of a characteristic curve the photographic material is given a series of exposures on an instrument known as a sensitometer. In this instrument the spectral quality of the radiation and the time of exposure are made to match the average conditions in photographic practice as closely as possible. The exact shape of the curve is influenced by the type of exposure and development used, making it imperative these conditions be exactly those for which the characteristic curve is intended to apply. Usually the finished sensitometric strip looks like a series of gray areas such as the one in the picture on page 280.

After the sensitometric strip has been exposed and processed the blackness, or density, of each of the exposed areas is measured by a densitometer. A typical characteristic curve is shown in Figure 1.

In Figure 1 an attempt has been made to illustrate how the sensitometric method operates. At the top of the figure is a series of prints made from the negatives shown immediately below them. A series of exposures was given so that a range from badly under-exposed to very dense negatives was obtained. The best possible print was then made from each of the negatives. It will be noticed that as the negative exposure increases the resulting print quality increases rapidly to a high value and then remains substantially constant for further increase in negative exposure. The speed of the material is determined from the negative exposure required to yield the first excellent print.

The characteristic curve for the negative material used is shown in the lower portion of the figure. The slope, or gradient, of the curve at any given point indicates the rate of growth of

[4] "The Evaluation of Negative Film Speeds in Terms of Print Quality". Loyd A. Jones, Jo. Franklin Inst, Vol 227, p 297 and p 497 (1939).
"A Study of Various Sensitometric Criteria of Negative Film Speeds". Loyd A. Jones and C.N. Nelson, Jo. Optical Soc, Vol 30, p 93, March, 1940.

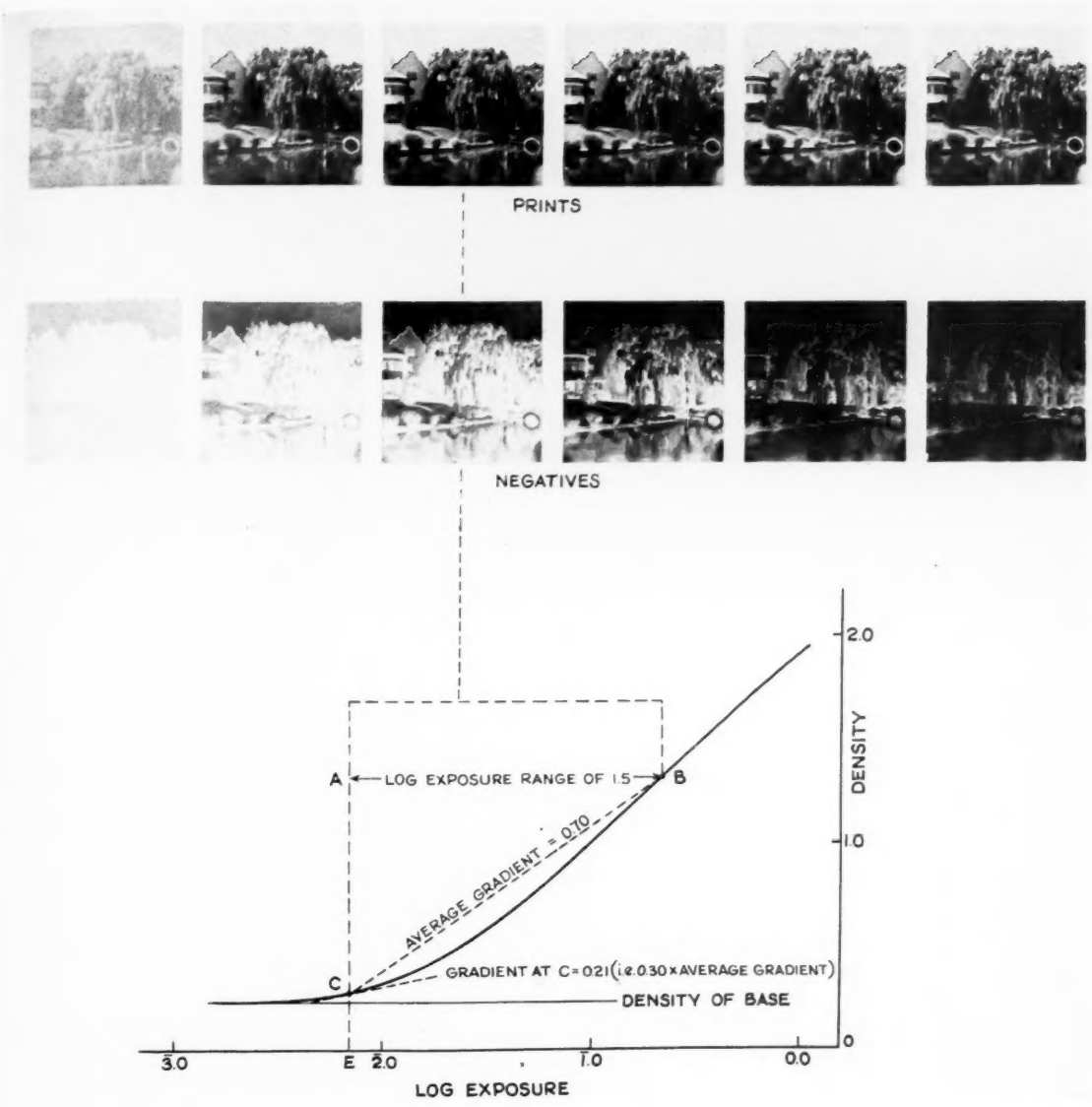


Figure 1.

Illustration of the use of the sensitometric criterion for determining photographic speeds.

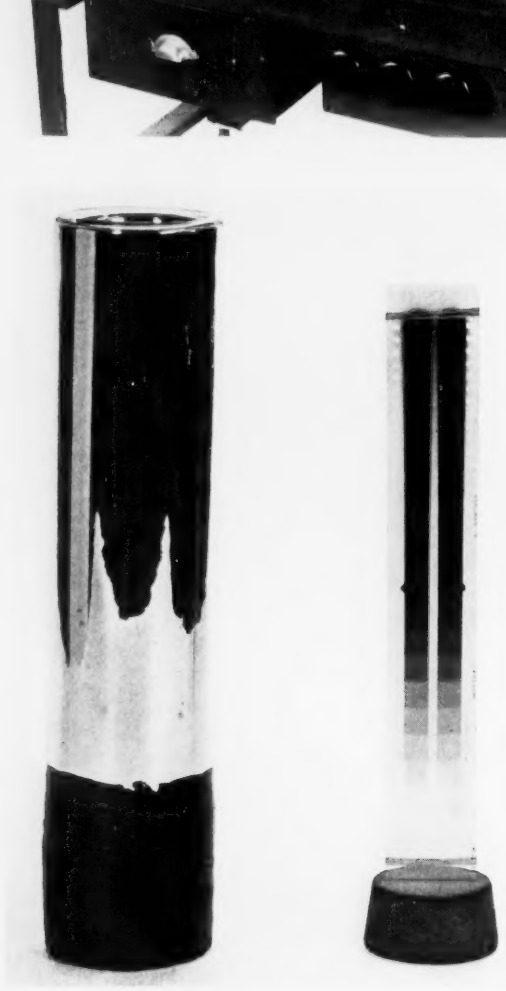
density with change in log exposure and thus shows the difference in photographic effects resulting from a given difference in scene brightness. It will be seen that the gradient produced by the photographic material differs with the exposure.

In the illustration the negative which produced the first excellent print was so exposed that it used the portion of the characteristic curve indicated between the log exposure values A and B. The average contrast of the negative is indicated by the slope of a line drawn from the lightest to the densest part of the negative which in this case is the line CB. Since the characteristic curve does not have a straight line throughout the range of densities covered by the negative the gradient varies from one part of the negative to another, the lowest value being in the shadow region of the picture as indicated at C.

It has been found, as a result of a comprehensive research, that if the gradient in the deepest shadow portion is .30 of the average gradient for

Left—A sensitometer consists of a standard light source, a timing mechanism, and an exposure modulating device.

Left (below)—Test strips of exposed photographic materials are mounted on a suitable framework and immersed in a developing solution contained in a Dewar flask.



the entire negative, the negative is capable of yielding an excellent print. If the gradient for the deepest shadow is less than .30 of the average gradient of the negative, inferior prints will result. Thus it is evident that the concept of speed, namely, that speed is related to the minimum exposure required to give a negative from which an excellent print can be made, is equivalent to the sensitometric criterion that the gradient for the darkest portion of the subject shall be .30 times the average gradient of the negative.

This method of determining speed has been substantiated not only by the statistical fact that sensitometric results agree excellently with those found by actual picture-taking practice but by theoretical considerations as well. Since the quality of a photographic print depends upon the manner in which brightness differences have been recorded by the negative and the print materials, it is clear that any method for properly evaluating speed must be based upon the ability of the material to record brightness differences. The new method, in laying emphasis on the gradient characteristics of a material, is distinctly superior to the previously used methods for determining speed.

As mentioned before, the shape of the characteristic curve is dependent upon the exposing and processing conditions used. The light source used is that adopted by the International Congress of Photography in 1928, and consists of an incandescent lamp filament operated at a color temperature of 2360 degrees K and screened by use of a specified liquid filter to give radiant energy of a quality closely approximating that of mean noon sunlight.

The development of roll films and film packs is carried out in a metol-hydroquinone developer approximating that used in photo-finishing houses of the United States. The developer specified for the miniature camera films is a slower acting developer and is widely used in the processing of miniature camera negatives.

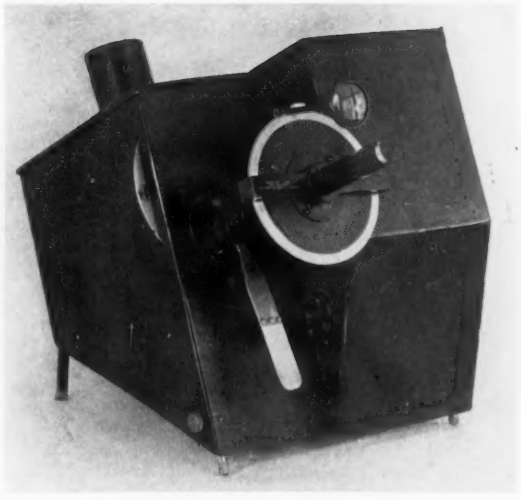
For testing purposes the developer agitation must be equivalent to that obtained by a hand-

agitated Dewar flask fitted with a device for holding the exposed sensitometric strip (as shown in our cover picture). All materials are developed to a specified value of average gradient rather than for a fixed time.

The present publication deals only with a method of determining speed of a specific sample of photographic material. As yet the details have not been worked out for applying the method to the assigning of a speed number to a product as a whole. The latter phase of the problem is being considered and no doubt some recommendation will soon be available.

Another important phase of the speed problem is the determination of recommended exposures for normal picture-taking practice. It is clear that the present specifications are not quite adequate for this problem since they indicate the minimum exposure required for excellent results only for a specific piece of material when used under a specific set of handling conditions. Recommended exposures must take into account variations in processing, in film sensitivity, in the measurement or estimation of scene brightness, and similar variables which cause the user to obtain slightly different effective exposures than what he expects. The average consumer must use an exposure value which includes a margin of safety such that he is assured under all conditions at least enough exposure to produce excellent results. Such information can be used either in the form of printed exposure guides or in connection with exposure meters.

Thus far the committee has not had an opportunity to give serious consideration to the details of this problem of determining recommended "calculator numbers" or "meter setting values". It is clearly recognized, however, if the whole photographic industry is to derive maximum benefit from the standardization project, that specifications must be drawn as soon as possible to extend the method for measuring speed of a specific sample to the assigning of a speed number to a product as a whole and to the determination of recommended meter settings.



The densities of the proposed sensitometric strip are measured on a suitable photometer known as a densitometer.

Research Paper Presents Data On Standard Resistors

Frequently the National Bureau of Standards is called upon to compare precision resistors with its own standards, according to an article in the August issue of the Technical News Bulletin of the National Bureau of Standards. Information on these resistance measurements has been accumulating in the National Bureau of Standards for more than 30 years, the Bureau announces.

In the August Journal of Research, Frank Wenner presented the more important parts of this information, not adequately explained in previous publications. Reprints of his research paper RP1323 may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. at 15 cents each.

The paper is intended to give college students and others of limited experience in electrical measurements an understanding of the Wheatstone bridge and of the Thomson bridge. It is also intended to give those actually engaged in making resistance comparisons an understanding of the precautions necessary to obtain a precision of the order of one part in a million with resistors having values in the range from 0.0001 ohm to 10,000 ohms.

The sensitivity of bridges is discussed rather fully. The more important factors limiting the precisions, such as terminals and contacts, thermoelectromotive forces, insulation, and the optical system of the galvanometer, are given due consideration. Methods, apparatus, and procedures used at the National Bureau of Standards in precise comparisons of resistance receive special attention. Reference is made to more than 100 publications having a more or less direct bearing on the subject of resistance measurements.

Advertisers Dramatize Standards; Consider New Standards Institute

Wiese, Institute president, describes standards program to Association of National Advertisers as new advertising technique; plans extensive use of procedure of American Standards Association

AN event of outstanding importance to manufacturers occurred in late October when 500 members and guests of the Association of National Advertisers, gathered at White Sulphur Springs, W. Va., turned their convention spotlight on an analysis of standards in the field of consumer goods.

Feature of the standardization session was a dramatization by players from the Columbia Broadcasting System, which traced specification buying back to Colbert in the 17th Century, and presented the advantages of standards for consumer goods as well as the difficulties of arriving at standards which have meaning.

Although the implications of the so-called consumer movement have long been discussed in business circles, standardization of consumer goods was thus cast in a featured role in a national convention of national advertisers for the first time. This newly placed emphasis appeared to be an eloquent commentary on several swiftly moving trends, according to Otis L. Wiese,[1] editor of McCall's Magazine, who spoke on the advertisers' standardization program. Chief among these trends he placed a threat of governmental imposition of standards for consumer goods; the continued pressure of organized consumer groups; and, most recently, the renewed impetus afforded the consumer movement by direct representation on the National Defense Advisory Council.

Have Common Interests

Closer examination of these trends discloses something of a paradox, Mr. Wiese declared. For, instead of reflecting a series of basic conflicts between producer and consumer, they point instead to a common denominator wherein the dominant interests of both factions meet.

"What readers think of advertising directly affects me," Mr. Wiese told the convention of national advertisers. "It is easy to see then, why I am concerned with stabilizing their confidence in advertising. In 1939, $1,600,000,000 were spent in national advertising. In 1940 there will be more. If there is any indiscriminate criticism or resentment of advertising on the part of, say, even ten per cent of the audience, there is $160,000,000 that has gone down the drain."

In an interview after the convention, Mr. Wiese outlined his views on the place of consumer standards in business as follows:

Because advertising is the major medium of contact between producer and consumer a great deal of the criticism leveled against business by consumer spokesmen has centered about this promotional vehicle. But, he said, a deeper analysis of the problem has proved that consumer dissatisfaction stems from a fervent desire for more facts about merchandise construction and performance—more facts that will help consumers become more efficient buyers.

Many business leaders alert to the times have concluded that the logical meeting place for an improved understanding between producer and consumer is the realm of standardization. For here, all elements in the movement of merchandise from manufacturer to ultimate consumer, find a unity of interest, Mr. Weise explained. A standard faithfully followed and supported by labeling can reduce manufacturing waste, improve labor relations, increase turnover, lower selling costs, establish a basis for quality certifi-

[1] Mr. Wiese, as editor of *McCall's Magazine*, is taking the lead in organizing the Institute of Standards, which includes as an important part of its program, approval of consumer standards by the American Standards Association.

cation, and increase consumer confidence and goodwill, he said.

The distributor can likewise benefit from adherence to standards by improving his system of stock selection, increasing turnover, cutting down returns, facilitating adjustment of complaints, and increasing prestige. And, for the consumer, standards furnish the groundwork for greater confidence in quality and quantity, easier selection of merchandise, shortened shopping time, and a recognized basis for comparing values.

With these standardization attributes brought to the fore, Mr. Wiese pointed out, the problem naturally resolves itself into the creation of a mechanism that can coordinate the various factors that enter into the use of standards in the marketing process. This is the function of the Institute of Standards, he said.

The Institute is such an agency, sponsored by publishers and open to all publishers, enlisting the voluntary cooperation of manufacturers, utilizing the facilities of leading commercial laboratories, and offering consumers participation in its benefits, Mr. Wiese explained. The Institute's scope covers the welding of all efforts in the use of standards in marketing consumer goods including the certification of products and labels which have been tested and found to meet prescribed standards; and the dissemination of information regarding these functions to local and national consumer groups.

Will Work Through ASA

From a functional standpoint the Institute will utilize existing bodies wherever possible, he stated. In line with this policy a proposal has been prepared to promote the objectives of consumer goods standards within the framework of the American Standards Association. The Institute also seeks to make available a special grant for the study and development of consumer standards, to cover the employment of a competent engineer, a home economist, and whatever additional personnel and facilities are deemed necessary for the success of the project, he said.

Since consumer groups are represented in the ASA, he went on to add, consumer representatives will be given an opportunity to participate in the promulgation of all standards under discussion. For the first time they will have available technical assistance which will enable them to act on intricate problems that require specialized knowledge.

In addition to its concentration on product standards the Institute will also foster the development of informative labels, again employing the facilities of a body already in existence and equipped to perform this function. In this case the National Consumer-Retailer Council, which also includes representative consumer leaders in its membership, appears a logical vehicle for action, Mr. Wiese believes.

> "More significant than the details of the discussion at the ANA meetings was the over-all tone," remarked *Business Week* in its issue of November 2 reporting the standardization session of the Association of National Advertisers. "A year ago, when advertising men got together, the stress was on the belief that standards, particularly grade labeling, would be the death of trademarks and advertising. Now there is a readiness to explore the idea that standards might become a strong promotional force to help business sell its goods."

Mr. Wiese briefly outlined the methods proposed for carrying out the standardization and labeling objectives of the Institute as follows:

Requests for product standards will be brought either directly to the American Standards Association or through the Institute in which case the project will be referred to the ASA. Standards will be developed with the cooperation of manufacturers affected and with consumer representatives participating.

Final approval of a standard will then enable any manufacturer-member of the Institute to submit his products to one of the participating commercial laboratories for test. If the product conforms to the standard, the manufacturer will be licensed to use the Institute's certification symbol, which involves an agreement calling for periodic testing of the product. The symbol is not a "seal of approval"; it simply verifies the fact that a product has met an accepted standard. The Institute is not a "grading" agency. It is an organization for all of business and for all consumers.

Testing costs will be borne by participating manufacturers who will also pay a $200 annual membership fee to the Institute. Publisher members will likewise pay an annual membership fee plus a pro rata assessment to meet the Institute budget. The latter will elect a board of trustees which will be responsible for administration and finance. Provision is also made for consumer group membership.

Organizations Cooperate

One of the most encouraging aspects of the Institute's progress to date has been the degree of cooperation extended by all interested parties, Mr. Wiese declared. A very constructive meeting,

for example, he said, was held in Washington recently, with the active participation of representatives of the General Federation of Women's Clubs, the American Home Economics Association, the American Association of University Women, the American Standards Association, and the National Consumer-Retailer Council.

In the final analysis, Mr. Wiese emphasized, business can choose any one of three alternatives in seeking the solution of its consumer relations problems. It can ignore the consumer movement, it can fight it, or it can face the problem by sitting down and working it out with consumers.

Considering the unity of interests mentioned above, the last of the three alternatives seems the logical one to pursue, he stated. By participating actively in the promulgation of standards for consumer goods, industry can help formulate what government may otherwise impose if nothing is done by business.

Manufacturers and trade association executives who recognize the significance of industrial standards know what this technique has done for plant efficiency and product improvement. The same benefits can be transplanted to the field of consumer goods, Mr. Wiese declared, and both industry and consumers can thereby benefit.

ASTM Reorganizes Committee On Building Stones, Slate

Growing interest in standardization and research on the subject has brought about the reorganization of ASTM Committee C-18 on Natural Building Stones and Slate, the American Society for Testing Materials announces. Temporary officers have been elected as follows:

W. C. Clark, Engineer Assistant, Public Buildings Administration, Federal Works Agency, *Chairman*

T. I. Coe, Technical Secretary, Department of Technical Services, American Institute of Architects, *Vice-Chairman*

D. W. Kessler, Chief, Stone Section, National Bureau of Standards, *Secretary*

The work of the committee will cover the formulation of specifications, methods of test, and definitions pertaining to natural building stones and slate.

Seven subcommittees have been set up, one an advisory subcommittee, the others to work on nomenclature and definitions, test procedures, quality specifications, surface finishes, stone setting and maintenance, and cubing.

Revision of List of Recommended Paper Sizes

The Standing Committee in charge of Simplified Practice Recommendation R22-33 for Paper has approved a revision of the recommendation. The proposed revision establishes basic sheet sizes for 11 classes of paper, the National Bureau of Standards announced recently.

Copies of the revision have been mailed to producers, distributors, users, and other interests for consideration and approval. Upon approval the revised recommendation will remain in effect until it is again revised by the standing committee of the industry.

The classes of paper covered by the proposed revision are bond and writing papers, rag content or sulphite; ledgers, rag content; ledgers, sulphite; loose-leaf ledgers, rag content or sulphite; machine posting ledgers, rag content; uncoated, coated two sides, coated one side, and offset book papers; index bristol, and cover paper.

The simplification of sizes of basic papersheets was first undertaken in 1923, when a general conference of representative manufacturers, distributors, and users recommended as standard sizes eight basic sizes and their doubles. In 1933 the standing committee increased the classes of paper covered from three to five.

Mimeographed copies of the present proposed revision may be obtained without charge from the Division of Simplified Practice, National Bureau of Standards, Washington, D. C.

List of Simplified Practice Recommendations Available

A new list of Simplified Practice Recommendations dated October 15 has just been published. Copies of the list can be obtained free of charge from the National Bureau of Standards, Washington, D. C. The list has the designation LC-612.

Simplified Practice Recommendations are records of stock items retained after excessive variety of manufactured products or of methods has been eliminated. These recommendations are developed by voluntary cooperation among manufacturers, distributors, consumers, and other interests, upon the initiative of any of these groups. In developing the recommendations a regular procedure of the National Bureau of Standards established for that purpose is followed.

How Army and Navy Cooperate On Standards for Purchasing

UNDER the defense program, an informal arrangement which has existed for some time between the Army and the Navy for coordination of their standards has been formally recognized. The new arrangement brings officers of the two Services in charge of standardization into the same office and into close personal as well as official contact.

This formal arrangement is a logical development, according to a recent interview with Lieutenant Colonel James Younger, War Department representative on the ASA Standards Council. Following the last War, an Army and Navy Munitions Board, composed of the Assistant Secretary of War and the Assistant Secretary of the Navy, was organized for the purpose of coordinating all matters pertaining to procurement of supplies by the Army and Navy, he explained. Under the Army and Navy Munitions Board, an office called the Plans, Programs, and Requirements Committee has the function of coordinating standardization and specification matters between the War and Navy Departments. Commander H. V. McCabe is the Navy representative for standardization in this committee, and Lieutenant Colonel Younger is the Army representative.

Work in Same Office

These two officers, who under the formal arrangement are now located in the same office, are constantly engaged in making comparative studies of Navy Specifications, Army Specifications, and Federal Specifications, as well as standards and specifications prepared by national technical societies. They are continually working to determine where standardization or consolidation of specifications might be profitable for the War and Navy Departments and where such consolidation would result in reducing the number of specifications now in use, Colonel Younger declared.

Any such reduction in the number of specifications helps to avoid confusion on the part of industry, it has been found, and frequently results in procuring supplies more readily and at lesser expense.

The actual purchasing for the Services is decentralized, according to Lieutenant Colonel Younger's description of the methods now being followed. In the case of the War Department, for instance, the agencies in Washington are controlling and supervising agencies, and the field agencies, such as the depots, arsenals, etc., perform the actual procurements. The same can also be said to a certain extent for the development of standards and specifications. The technical or operating Services in the field outside of Washington normally prepare specifications after standardization of items and coordination and approval by the various agencies in the War Department. All standardization and specifications work comes under the respective Chiefs of Supply Arms and Services for items charged to the respective services for procurement; that is, aircraft by the Air Corps, ordnance items by the Ordnance Department, and all items common to two or more branches, except certain technical terms, by the Quartermaster Corps, etc.

Again in the case of the War Department the Standards Division of the Planning Branch, Office of the Assistant Secretary of War, exercises general control and supervision over questions of procurability, adaptation to mass production methods, preparation of specifications, etc., by the eight Supply Arms and Services engaged in procurement. Every item of equipment adopted by the War Department must receive clearance by this Division before final adoption as standard, and all standard specifications promulgated by the War Department receive final approval by the Division before they are promulgated.

Younger Has Double Function

In the War Department's program, Lieutenant Colonel Younger has a double function. He not only acts as the Army representative on the Army and Navy Munitions Board, but also is the representative of the Assistant Secretary of War for approval of the standards and specifications to be adopted by the War Department.

The Army and Navy do not depend on the Plans, Programs, and Requirements Committee of the Army and Navy Munitions Board alone

to maintain contact on standardization of items of equipment, Colonel Younger declared. The Army-Navy Aeronautical Board, for example, concerns itself with joint Army-Navy aeronautical problems, including the preparation of joint specifications. When specifications have been prepared by this Board, and after they have been approved by the respective Army Air Corps and Navy Bureau of Aeronautics' representatives, they are sent to the Plans, Programs, and Requirements Committee for final promulgation.

A number of Joint Ordnance Committees are also engaged in efforts to produce joint standards and specifications and to exchange ideas. The most important of these boards are:

Joint Army-Navy Board on the Manufacturing and Testing of Smokeless Powder

Joint Army-Navy Board on Gun Forgings

Joint Army-Navy Committee on Coordination and Standardization of Design of Army and Navy Demolition Bombs

In addition, there are numerous technical committees, one in each Supply Arm and Service in the War Department. These committees also include Navy Department members to facilitate exchange of information.

There are innumerable informal contacts between the comparable sections of the two Services as well as these formal contacts between agencies of the War and Navy Departments, Colonel Younger's statement indicated. For example, a radio tube expert in the Navy Department may know the man holding a corresponding position in the War Department, and hold frequent informal contacts and conferences with him. The same is true of most of the activities within the two Services, such as Ordnance, Medical, Quartermaster, etc.

Both the Army and Navy have representation on most of the committees of the Federal Specifications Executive Committee which promulgates Federal Specifications. This contact is especially important in view of the fact that the War Department has adopted 1,265 of the some 1,300 Federal Specifications, and the Navy Department has adopted 865, as well as following Federal Specifications in all but number in many other Navy specifications.

In addition to their work on joint Army and Navy specifications, Army and Navy representatives are working on national industrial standards through membership on committees of the American Standards Association as well as of national technical societies.

"The only place where the Army and Navy do not really see eye to eye is on the football field," Colonel Younger remarked. "Otherwise they are both striving for the same end; namely, national defense and the mutual protection of American rights and interests."

MSC Urges Action on ASA Machine Pin Project

The Mechanical Standards Committee has recommended that the ASA project on Machine Pins (B43) be started actively by the sectional committee and the sponsors for the project, the American Society of Mechanical Engineers and the Society of Automotive Engineers. This recommendation was made at the request of the War Department, which explains that the Ordnance Department would like to use as many standard parts in assemblies for artillery materiel as possible. Machine pins, particularly taper pins, are of special interest to the War Department at the present time, it was explained. Any information as to what is considered standard in the industry for taper pins will be welcomed, Colonel Younger of the Quatermasters Corps declared in his letter submitting the War Department's request to the ASA.

"It is hoped," he said, "that through the activity of Committee B43 a suitable standard can be promulgated in the near future."

Manhole Cover Standard Is Submitted to ASA

A proposed standard on Manhole Frames and Covers for Subsurface Structures, which has been under consideration since 1935, has been submitted to the American Standards Association for approval. More than 6,000 copies of the first draft of the standard, completed in 1931, were circulated with a questionnaire to producers and users, and criticisms and suggestions received as a result were used in preparing the final draft just submitted.

Work on the standard is being carried on under the leadership of the American Society of Civil Engineers and the ASA Telephone Group. The committee which developed the proposed standard was organized in 1926, with L. B. Fish of the American Telephone and Telegraph Company as chairman. Mr. Fish retired several years ago, and the committee has been working with S. C. Miller of the American Telephone and Telegraph Company as temporary chairman since 1937.

ASTM Standards Committee Acts on Rubber Products

AT a recent meeting of the American Society for Testing Materials' Committee E-10 on Standards action was taken on specifications and tests proposed by ASTM Committee D-11 on Rubber Products. ASTM Committee E-10 has authority to act for the Society between annual meetings to determine whether the ASTM committees have reached a consensus on their recommendations on standards.

Four new test methods proposed by the Committee on Rubber Products were acted upon by the Standards Committee:

Testing Rubber Compounds for Resistance to Accelerated Light Aging

Calibrating a Light Source Used for Accelerating the Deterioration of Rubber

Test for State of Cure (T-50 Test)

Test for Tear Resistance of Vulcanized Rubber

The so-called "T-50 Test" was approved and the other three methods were accepted for publication as information and comment. They will not be assigned ASTM designations and are to be published in the Proceedings as part of the 1940 report of D-11 and also in the Compilation of ASTM Standards on Rubber Products, which is now being prepared.

Test Determines Extent of Cure

The "T-50 Test" is designed as a means of determining the extent of cure of a rubber compound by measuring the temperature at which it recovers its elasticity, when it is stretched at room temperature, frozen at a sufficiently low temperature to cause it to lose its elastic properties, and then gradually warmed.

"When carried out under properly controlled conditions," the ASTM explains, "the T-50 value shows a good correlation with combined sulfur in a stock of given composition, and a qualitative correlation with combined sulfur in stocks of varying compositions. Its advantages over a combined sulfur determination are its greater speed and simplicity and its applicability in certain cases where sulfur determinations are difficult or impossible. Its use is limited to rubber compounds with a relatively high elongation at break (generally 300 per cent or over). It is mainly useful in controlling and checking uniformity of cure in production and as a tool in experimental work where knowledge of the state of cure is important. It is not suitable for use in purchase specifications."

The new method outlines the testing procedures and describes the two types of apparatus which are in general use.

The method of testing rubber compounds for resistance to accelerated light aging is intended for use as a static accelerated test which can be applied in estimating the comparative resistance of soft vulcanized rubber compounds to deterioration when exposed to light having a frequency range approximating that of sunlight but a greater intensity in the ultra-violet range from sunlight. The method for calibrating a light source is a companion test to the one just described and is intended primarily for use in measuring the intensity of radiation from the light source used in that test. It may also be used, however, for measuring and integrating the intensity or total exposure from other light sources which are intermittent or variable in intensity, such as sunlight, and for comparing light sources.

The proposed test for tear resistance describes a procedure widely used for determining tear resistance of the usual grades of soft vulcanized rubber, such as tire tread, carcass and inner tube compounds or those used in most mechanical rubber goods, according to the ASTM announcement. It does not apply to the testing of material ordinarily classed as hard rubber. The method is useful only for laboratory comparisons and not as a method to determine the service value of the rubber except when supplemented by additional tests, the ASTM explains. This is due to the fact that tear resistance is affected to a large degree by mechanical fibering of the rubber under stress as well as by stress distribution, speed of stretching, and size of specimen. The significance to be attached to the results can only be determined by each laboratory for its particular problem, the ASTM announces.

Changes in Four Existing Tests

Changes recommended by Committee D-11 were approved by the Standards Committee in four existing methods of test. One, covering compression set of vulcanized rubber, D 395, is considered an improvement in the constant deflection type test, according to the ASTM announcement. It involves reporting compression set in terms of original deflection. A change in the Methods of

Tension Testing of Vulcanized Rubber (D 412) involves interpretation and analysis of data. It was decided that in case the ultimate tensile strengths fail to check within 10 per cent of the highest value obtained, additional specimens shall be tested until two or more such check results are obtained. The old figure was 5 per cent.

Revisions in the Methods of Testing Rubber-Insulated Wire and Cable (D 470) involve the ozone resistance test, give better temperature regulation during test, and provide improvement in the determination of ozone concentration.

Instead of dieing out the dumbbell test pieces after immersion in the Test for Changes in Properties of Rubber and Rubber-Like Materials in Liquids (D 471), this is now to be done before immersion. The approved revisions also reduce the time interval after removal from the liquid for determining tensile strength and elongation from 24 hours to 4 hours.

Modifications have been made in the Sample Preparation for Physical Testing of Rubber Products (D 15) which in general are in agreement with the new procedure established at the National Bureau of Standards. These modifications recognize important advances in equipment and technique in buffing.

Based on extensive inter-laboratory cooperative work and contacts with other groups, new tentative methods of chemical analysis have been set up carrying the designation D 297—40 T, replacing the existing standard D 297—39. The methods are classified into four separate procedures: Complete procedure; rubber solvent method; short procedure, and copper and manganese determination in crude rubber.

Standards for Tomato Products And Canned Tomatoes Amended

The use of calcium chloride is now permitted as an optional ingredient in canned tomatoes, according to an announcement by the U.S. Department of Agriculture. The change is brought about through an amendment to the identity standard for canned tomatoes. The label statement to be used when calcium chloride is present is specified in the amendment.

The standard, as amended, is printed in the *Federal Register* for June 19, copies of which may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. at ten cents each. The amendment became effective September 17.

The U.S. Department of Agriculture also announces that under the Food, Drug, and Cosmetic Act the test for acceptable tomato products is now more rigid. In 1931 it was announced that proceedings would be recommended against tomato products if mold filaments were present in more than 50 per cent of the microscopic fields. In 1938 it was decided that tomato juice would be regarded as adulterated when mold filaments are present in more than 25 per cent of the microscopic fields.

Material improvements effected by the industry now make these mold count limits unjustifiably liberal, the Food and Drug Administration reports. A further reduction has been made, therefore, and action will now be taken against tomato catsup, puree, and paste if mold filaments are present in more than 40 per cent of the microscopic fields, and against tomato juice if mold filaments are present in more than 15 per cent of the fields.

The use of tomato products with mold counts in excess of these limits in the manufacture of other foods such as tomato soup, beans with pork, spaghetti sauce, etc. constitutes adulteration, the Administration declares. Action will be taken against foods in which illegal tomato products have been used.

Public Hearing Regarding Standards for Cacao Products

The Federal Security Agency has announced that a public hearing will be held on December 9, 1940, to receive evidence to be used as the basis for definitions and standards of identity for the following cacao products: cacao nibs, chocolate liquor, coatings (sweet chocolate; milk chocolate; skim milk chocolate; buttermilk chocolate; mixed milk, skim milk, buttermilk, malted milk chocolate), cocoa, breakfast cocoa, low-fat cocoa, and coatings made from sweet chocolate or sweet cocoa and fats other than cacao fat.

The hearings will be conducted in accordance with the rules of practice for hearings under the Food, Drug and Cosmetic Act, published June 26, 1940. All interested persons are invited to attend. Evidence may be presented in person, by representative, or by affidavit. Affidavits will be received up to the day of the hearing.

The proposed definitions and standards are published in the Federal Register of October 19, 1940. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. at ten cents each.

War Department Requests Project On Statistics in Quality Control

The War Department has asked the American Standards Association to initiate a project on the Application of Statistical Methods to Quality Control of Materials and Manufactured Products.

In his letter transmitting the War Department's request Lieutenant Colonel James Younger of the Quartermaster Corps explained that such a project would assist the department in developing methods for a rational control of the quality of a product and that with the expansion of production this subject has become of increasing interest.

The War Department also suggested that the scope of the proposed project cover:

> The standardization of methods, means, and practices for the application of statistics to the control of quality of materials and manufactured products.

The request for the project has been submitted to the ASA Standards Council, and the chairman of the Council has appointed a special advisory committee, with the following membership:

Dr. R. L. Jones, ASA Telephone Group, *Chairman*

L. F. Adams, National Electrical Manufacturers Association

Harold F. Dodge, Bell Telephone Laboratories, Inc.

Stephen M. DuBrul, General Motors Corporation

Dr. John Johnston, U.S. Steel Corporation

Lt. Col. A. B. Johnson, Ordnance Department, U.S. Army

John S. Tawresey, SKF Industries, Inc.

This committee will advise the Council as to the initiation of the project, the way in which it should be handled and the scope of the work to be undertaken.

Auto Engines Used in New Tests On Gasoline Octane Ratings

A new series of tests on octane rating of motor fuels, using Ford, Chevrolet, and Buick automobile engines, has been started in the Riverside, Illinois, laboratories of Universal Oil Products Company. The tests are an attempt to learn more about the octane ratings of motor fuels when actually in use on the road. This research supplements the continuing campaign being carried on by the Cooperative Research Fuel Committee (the Society of Automotive Engineers, the American Petroleum Institute, and the American Society for Testing Materials) to relate laboratory tests to service obtained from motor vehicles on the road. Among the laboratory tests used to measure the octane ratings of motor fuels is the American Standard Method of Test for Knock Characteristics of Motor Fuels (ASA Z11. 37-1940; ASTM D 357-40; API 532-40).

"Behind the unremitting search for more accurate testing methods," explains *Business Week*, October 5, "is the economic pressure exerted by each refiner's striving to turn out a gasoline of higher octane rating than his competitors. To raise octane even one point costs some small fraction of a cent per gallon. . . . But when Smith filling stations placard their regular gas at a higher than prevalent octane, Refiner Jones boosts the ante another number or two at no price increase—or drops gallonage. What drives Smith's and Jones' technicians and treasurers to drink is knowing that these extra octane ratings are sheer waste, since probably 95 per cent of the cars which put the expensive stuff in their tanks can derive no possible advantage from it. Most older engines are not built to get the added power and efficiency from gasoline of higher octanes than are now usual. Newer cars' engines get the benefit only if they are kept tuned up."

November 25 Is New Date to File Statements on Vehicle Sizes

The period for filing statements with the Interstate Commerce Commission in connection with its investigation on sizes and weights of motor vehicles has been extended to November 25, 1940. The original period was to have closed November 10.

The investigation is being carried out by the Commission as the basis for a report on the need for Federal regulation of motor vehicle sizes and weights.

Company Standards Department Resembles Sub-Assembly

Abstracted from "Standards: A Record of Good Practice" by Charles F. Bullard[1], published in the Tool Engineer, October, 1940

"YOU can think of a company as a complete mechanical assembly, and think of the standards department as one of its parts, or sub-assemblies. Like all parts and sub-assemblies, this one has several fixed dimensions that have been worked out over the years by trial and error.

"The following six points are 'dimensions' that cannot be modified greatly, if at all, regardless of the assembly, if the component is to perform its function—to save money through the medium of recorded good practice:

"1. A standard must be in writing, or be an equally definite drawing. It must be dated and authenticated.

"2. Someone, with no other duties, must be held responsible for issuing original and revised standards, as required; the funds for this purpose, and standardization policies, to be provided by an official who supervises all those affected by the standard.

"3. There must be a democratic committee system (or its equivalent), to furnish first-hand information from the work level, for the original standard and its descendants.

"4. Standards must be logically grouped, conveniently bound, well indexed, and be 'at the elbow' of all those expected to abide by them.

"5. In a given field, standards should have coverage, that is, provide answers to at least a majority of the questions likely to arise in that field.

"6. Standards must have a flexible quality, such that departures for good reasons are encouraged. Standards must prevent regression, without hindering improvements.

"American industry has been quick to adopt improved methods. The last decade has seen remarkable strides in medical, safety, personnel, industrial-relations, and job-evaluation departments, to mention a few. Reports that more and more companies are using and supporting their headquarters of standards information, the American Standards Association, suggest that standards departments may soon be under way on the same scale."

[1] Material Standards Department, Eastman Kodak Company, Rochester, N. Y.

Voluntary Soybean Standards Become Mandatory This Month

On November 20 the voluntary standards for soybean inspection become mandatory, the Agricultural Marketing Service of the U.S. Department of Agriculture states. The official mandatory standards will be basically the same as those now in effect on a voluntary basis. The grade specifications remain unchanged.

Officials of the Agricultural Marketing Service expect that the transition from the present voluntary system to the mandatory provisions will be made with little or no confusion, according to the statement by the Agricultural Marketing Service. Until November 20 soybeans are being inspected in the same manner and under the same authority and regulations as heretofore. The mandatory provisions will be carried out under the U. S. Grain Standards Act.

Suggestions for changes in the soybean standards have been made recently following a series of public meetings held in the Middle West for the purpose of discussing the promulgation of the present standards under the U.S. Grain Standards Act. Some of these suggested changes involve basic or fundamental provisions; others call for adjustment in the limits of the grade factors. Available data will be studied carefully and further research made in order that full consideration can be given to the merits of these proposals.

Copies of the official Grain Standards of the United States for Soybeans and further information about the inspection of this commodity under the U.S. Grain Standards Act may be obtained from the Agricultural Marketing Service, Washington, D. C., or from any of its grain and seed field offices.

Ainsworth Recommends Closer Contact Between ASA and Pacific Coast

CYRIL AINSWORTH, assistant secretary of the American Standards Association, reported to the ASA Board of Directors at its meeting September 25 on his recent trip to the West Coast. The trip was undertaken for the Division of Labor Standards of the U. S. Department of Labor and for the purpose of promoting better understanding of the work of the American Standards Association, particularly in connection with safety codes.

The trip was made at a particularly auspicious time because many governmental agencies are now planning to initiate new or broader safety code programs, Mr. Ainsworth told the Board of Directors. Many governmental officials whom he visited indicated a special interest in ASA work in view of the fact that the budgets of their departments are not large enough to cover technical research or extensive committee work.

Met with Industry and Government

In addition to meeting with governmental agencies, Mr. Ainsworth made many contacts with individual industrial plants during the trip. He also spoke before the safety engineers' societies in Los Angeles and San Francisco, the safety inspectors of the California Industrial Commission, and the Illinois Department of Labor, the Northern California Regional Committee of the American Society for Testing Materials, the annual conference of the Secretaries of the Chambers of Commerce and Managers of Trade Associations of the Pacific Coast region, the draftsmen's group of the Bremerton Navy Yard, and the Western Aircraft Standards Committee.

As a result of Mr. Ainsworth's visit, contact was established between the American Standards Association and the Pacific Coast Building Officials Conference of America. Returning the visit, Hal Colling, manager of the Conference, visited the ASA offices during the week of October 7, and attended the meeting of the Executive Committee of the Building Code Correlating Committee.

There is definite need for closer contact between the American Standards Association and organizations in the Pacific Coast region, Mr. Ainsworth reported. He recommended that a trip to the coast should be made by some staff member of the ASA at least once a year, and if possible once every six months.

Member-Bodies and cooperating bodies should be encouraged to give greater publicity not only to their own participation in ASA work, but also to the entire ASA program, he said. He found evidence during his trip that individual companies which are members of ASA Member-Bodies or of bodies cooperating on individual technical projects had received little information from their trade associations concerning the national standardization movement. Greater promotional effort by Member-Bodies and cooperating organizations would create greater interest in the national standardization movement as well as greater and more effective use of standards approved by the ASA, he reported.

Mr. Ainsworth found that many of the governmental and industrial organizations and individuals with whom he came in contact believed that there should be more frequent review of standards to ensure that they are kept up-to-date. One state which was considering rules and regulations in a certain field found that the American Standard safety code in that field was of no value to it because the latest revision was approved in 1925, he reported. He recommended to the Board of Directors that American Standards should be reviewed frequently in order to ensure that they are based on the latest practice.

ASA Annual Meeting December 11

The Annual Meeting of the American Standards Association will take place December 11 at the Hotel Astor, New York. It will be a luncheon meeting, preceded by a meeting of the Standards Council in the morning and followed by a meeting of the Board of Directors.

Plans for the meeting include a brief report of the year's activities by Edmund A. Prentis, president, and the annual report of the Standards Council on technical accomplishments during the year. Officers for the coming year will be announced directly following the luncheon.

Those wishing to make arrangements to attend the meetting can do so by writing in advance to the American Standards Association at 29 West 39 Street, New York.

Electrotechnical Vocabulary Gives Electrical Terms in Six Languages

THE American Standards Association has just received from Great Britain additional copies of the new six-language International Electrotechnical Vocabulary developed by the International Electrotechnical Commission. This book, many years in preparation, is the most complete study of scientific and industrial terms used in the various branches of electrotechnics that has yet been made.

The book is divided into a number of sections, the first of which covers fundamental and general definitions of electrical terms. The other sections deal specifically with: machines and transformers; switchgear and control gear; apparatus for scientific and industrial measurements; generation, transmission, distribution; electrical traction; power applications; thermic applications; lighting; electro-chemistry; telegraphy, telephony; radiology; and electro-biology.

Definitions are given in both English and French, the two official languages of the International Electrotechnical Commission which supervised this work. A translation of the terms alone is given in German, Italian, Spanish, and Esperanto. At the time the work was undertaken it was intended to carry the translation into additional languages, but with the present conditions in Europe it seems unlikely that further work will be undertaken for some time.

This book is the result of many years of continuous labor on the part of a committee of experts from Austria, France, Germany, Great Britain, Italy, the Netherlands, Poland, Spain, and the United States. The first printing was approved at the meetings of the International Electrotechnical Commission in Torquay, June 1938; but the small supply of copies that reached this country was quickly exhausted. The present edition (310 pages bound) has been photo-offset from the original printing. It is available from the American Standards Association, 29 West 39th St., New York, N. Y. at $2.50 per copy.

Standards Established For Cream and Canned Milk

Definitions and standards of identity for cream, whipping cream, evaporated milk, concentrated milk (plain condensed milk), and sweetened condensed milk have been established under the Federal Food, Drug, and Cosmetic Act, the Food and Drug Administration announced recently. The standards were formulated on the basis of evidence received at public hearings last May.

The regulations for cream and canned milk are printed in the Federal Register of July 2, copies of which may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. at ten cents each.

The date originally set for all of the standards to become effective was September 30, 1940. On September 10 it was announced that the effective date for evaporated milk had been postponed from September 30 to March 1, 1941. September 30 still remained the effective date for all the other classes of cream and milk.

The reason for the postponement in the case of evaporated milk was a request on the part of the Evaporated Milk Association that the date be postponed until March 1. The Association showed that at the time the standard was issued, July 2, production had just passed its annual peak, a great proportion of this production had been placed in cool storage for distribution during the winter months of low production, and if the stored product were to be removed from storage during the warm months moisture would accumulate on the cans, with consequent rusting of the tins and impairment of the labels.

Evaporated milk produced under the new standard differs only slightly from evaporated milk heretofore produced. The principal difference is that the new standard requires 7.9 per cent of milk fat, whereas 7.8 per cent had been previously required. The Evaporated Milk Association stated that by August 1 practically all of the evaporated milk being produced at that time complied with the new standard and was in current distribution.

Standards May Determine Date For Television Merchandising

Large-scale merchandising of television sets will probably start next year after technical standards for the industry have been established, the *New York Times* announced October 14. The National Television Systems Committee expects to have recommendations for standards to submit to the Federal Communications Commission by the first of the year, it was announced.

George B. Cortelyou

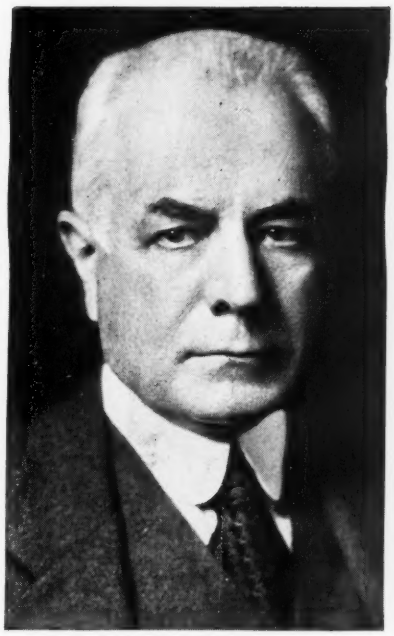
George B. Cortelyou died October 23.

With his passing, the American Standards Association loses one of its most distinguished members, a man who has been called "the father of the American Standards Association." A member of the Advisory Committee of Industrial Executives of the Association from 1925, he served as its chairman from 1934 until 1939. On his retirement from this office and in recognition of his outstanding contributions to the Association, he was named its first, and its only, Honorary Member.

Mr. Cortelyou was one of the few men who, from the beginning, visualized the great potentialities of the undertaking. No one has contributed more effectively to the upbuilding of the Association. Busy as he was, and notwithstanding his heavy responsibilities, he was always ready with a friendly word of advice, with a helping hand. Always his keen mind and sympathetic understanding gave the needed stimulation and help in solving a problem.

He was the only man living who had occupied three cabinet posts. He was the first secretary of the Department of Commerce and Labor (before division into two departments), and he was successively Postmaster General and Secretary of the Treasury under President Theodore Roosevelt.

As a young man he had hesitated between a musical career and a business career. An expert stenographer, he became a personal assistant to President Cleveland, and later private secretary to Presidents McKinley and Theodore Roosevelt. He was present when McKinley was mortally wounded at Buffalo, and was credited at the time with being the one man who kept his head in the confusion. He was responsible for calling the doctors and arranging for an immediate operation. His coolness in this emergency helped to influence President Roosevelt in his decision to invite him to continue as secretary



to the President, and led to that recognition of his abilities which brought him his Cabinet appointments.

Early in 1909 Mr. Cortelyou left public life to become President of the Consolidated Edison Company of New York, and held this office until his retirement in 1935.

"But the mere listing of these offices fails to do justice to the man," comments the *New York Herald Tribune*. "He stood out as a man of rare distinction of character, gentleness of spirit, and high sense of civic duty. Never vain, never self-seeking, never ostentatious, he was an American of whom the nation can be justly proud."

—P. G. AGNEW

"I have always been mightily interested in the work of the American Standards Association," George B. Cortelyou said at the ASA Annual Meeting several years ago. "There are a great many organizations in this country whose aims have been nebulous and their accomplishments nil. But this Association has the advantage of having a clear idea of what it is called upon to perform and it has done it magnificently."

Carboloy Announces Price Reduction Due to Standardized Product

The Carboloy Corporation has announced a price reduction on cemented carbide metals and carboloy tools, bits, dies, wear-resisting inserts, etc. made possible by placing a simplified and standardized line of cutting tools in mass production. The standardization is designed to cover 80 to 90 per cent of all applications for such tools, the company announces. The new line is available in five styles and three grades.

New Standards Received from Australia and Great Britain

The following is a list of new standards, many of which are emergency standards, received recently by the American Standards Association from Australia and Great Britain.

Australia

Electric Bread Toasters (C101-1940)

Electric Grillers; Type A, with Open or Only Partly Enclosed Elements (C102-1940)

Electric Radiators (C103-1940)

Electric Portable Immersion Heaters (C104-1940)

Electric Kettles and Saucepans (C105-1940)

Electric Jugs; Type A, with Open Elements (C106-1940)

Electric Irons (C107-1940)

Wall Switches (C113-1940)

Electric Soldering Irons (C114-1940)

Progress Report on the Standardization of Aircraft Materials and Components: Steels for Aircraft (MP4-1940)

Report on the Standardization of Aircraft Materials and Components: Light Alloys and Aircraft (MP5-1940)

Emergency Standards

Magazines for the Storage of Explosives (E A501-1940)

Bright Hexagon Bolts and Nuts of American Standard Thread Form (E B1-1939)

Mild Steel Sheets and Strips, Suitable for Welding (E D501-1940) (3S3)

55-56 Ton Nickel Chromium Steel for Aircraft Purposes (E D502-1940) (4S11)

Carbon Case-Hardening Steel (E D503-1940) (2S14)

3 Per Cent Nickel Case-Hardening Steel (E D504-1940) (3S15)

Tinned Steel Sheets (E D505-1940) (3S20)

"20" Carbon Steel (E D506-1940) (2S21)

Bright Steel Bars for Keys (E D507-1940) (3S24)

Air Hardening Nickel-Chrome Steel (E D508-1940) (2S28)

65-Ton Nickel Chrome Steel (E D509-1940) (S65)

3½ Per Cent Nickel Steel (E D510-1940) (S69)

"55" Carbon Steel, Normalized, Primarily Intended for Steel Cylinders (E D511-1940) (S70)

65-75 Ton Nickel Chromium Steel (E D512-1940) (2S81)

Low Carbon Steel Sheets and Strips for Water Jackets, Exhaust Manifolds and Low stressed Aircraft Parts—Suitable for Welding (E D513-1940) (S84)

High Tensile 5 Per Cent Nickel Case-Hardening Steel (E D514-1940) (S90)

Hard Drawn Carbon Steel for Valve Springs (E D515-1940) (DTD5A)

Silicon Chromium Valve Steel Forgings or Stampings (E D516-1940) (DTD13B)

High Nickel High Chromium Steel Valve Forgings (517-1940) (DTD49B)

High Tensile Steel Wire (E D518-1940) (DTD215)

Mild Steel Bars, Forgings, and Tubes—Suitable for Bearing Shells (E D519-1940) (DTD299)

80-90 Ton Nickel-Chromium Steel (E D520-1940) (DTD331)

Aluminum Alloy Sand or Die Castings, Heat Treated (E D601-1940)

Aluminum-Silicon Alloy Sand or Die Castings, Heat Treated (E D602-1940)

Aluminum-Silicon Alloy Sand or Die Castings—Suitable for Welding (E D603-1940)

10 Per Cent Copper-Aluminum Alloy Castings, Heat Treated (E D604-1940)

Silicon Aluminum Alloy Forgings for Engine Cylinders and Pistons (E D605-1940)

Aluminum Welding Wire (E D606-1940)

Aluminum Alloy (5% Silicon) Welding Wire (E D607-1940)

7/1 Aluminum Alloy Castings—Specific Gravity between 2.87 and 2.93 (E D608-1940) (4L11)

"Y" Aluminum Alloy Castings—Specific Gravity not greater than 2.85 (E D609-1940) (2L24)

Silicon Aluminum Alloy Castings—Specific Gravity not greater than 2.7 (E D610-1940) (L33)

"Y" Aluminum Alloy Castings, Heat Treated—Specific Gravity not greater than 2.85 (E D611-1940) (L35)

Aluminum Alloy Sand or Die Castings, Not suitable for Pistons (E D612-1940) (DTD133B)

Aluminum Alloy Sand or Die Castings, as Cast, Suitable for Pistons, etc. (E D613-1940) (DTD238)

Silicon Aluminum Alloy Castings, Fully Heat-Treated (E D614-1940) (DTD245)

Aluminum-Magnesium Alloy Sand or Die Castings, Not suitable for Pistons (E D615-1940) (DTD300)

Aluminum Alloy Sand or Die Castings, Heat-Treated, Not suitable for Pistons (E D616-1940) (DTD309)

Aluminum Alloy Tubes—Specific Gravity not greater than 2.85 (E D617-1940) (4T4)

Aluminum Tubes (E D618-1940) (4T9)

Soft Aluminum Alloy Tubes, Suitable for Oil, Petrol, Gas Starters and General Purposes (E D619-1940) (DTD310A)

99 Per Cent Aluminum Bars and Sections (E D620-1940) (L34)

Aluminum Alloy Bars, Extruded Sections and Forgings, Not greater than 3 Inches Diameter or Minor Sectional Dimension—Specific Gravity not greater than 2.80 (E D621-1940) (2L40)

Soft Aluminum Alloy Extruded Bars and Sections, Not greater than 3 Inches Diameter or Minor Sectional Dimension—Specific Gravity not greater than 2.85 (E D622-1940) (L44)

Aluminum Alloy Bars and Forgings, Greater than 3 Inches Diameter or Width Across Flats or Minor Sectional Dimension—Specific Gravity not greater than 2.80 (E D623-1940) (L45)

Hard Aluminum Sheets (E D625-1940) (2L4)

Half-Hard Aluminum Sheets (E D626-1940) (2L16)

Soft Aluminum Sheets (E D627-1940) (2L17)

Aluminum Alloy Sheets and Coils—Specific Gravity not greater than 2.85 (E D628-1940) (5L3)
Aluminum-Manganese Alloy Sheets and Strips (E D629-1940) (DTD213)
Aluminum Alloy Sheets and Strips (E D630-1940) (DTD270)
Half-Hard Aluminum Alloy Sheets and Strips (E D631-1940) (DTD296)
Aluminum Rivets—Specific Gravity not greater than 2.75 (E D632-1940) (L36)
Aluminum Alloy Rivets—Specific Gravity not greater than 2.85 (E D633-1940) (2L37)
Aluminum Alloy Wire and Rivets (E D634-1940) (DTD327)
Magnesium Alloy Castings (E D635-1940) (DTD59A)
Magnesium Alloy Castings, Suitable for Pressure Work (E D636-1940) (DTD136A)
Magnesium Alloy Castings, For Lightly Stressed Parts (E D637-1940) (DTD140A)
Magnesium Alloy Castings, Heat Treated, Suitable for Pressure Work (E D638-1940) (DTD281)
Magnesium Alloy Castings, Fully Heat Treated (E D639-1940) (DTD285)
Magnesium Alloy Castings, Heat Treated (E D640-1940) (DTD289)
Canvas Sailcloth, Nos. 1, 2, 3 and 4—Flax (E L501-1940)
Linen Duck, 12 oz. (E L502-1940)
Tarpaulin Canvas, 18 oz., 21 oz. and 24 oz. (E L504-1940)
Jute, Hemp and Flax Webbing (E L505-1940)

Great Britain

Air Raid Precautions Standards

Testing Incombustible Material to Provide a Minimum Standard of Protection against Incendiary Bombs (BS/ARP 47)
Fabric-Bitumen Emulsion Treatment for Roof Glazing (BS/ARP 48)

In the list of Australian emergency standards above, when there are two symbol numbers given after the name of the standard, the second one is the British Standards Institution symbol number for that standard. In those cases the existing British standard has been endorsed by the Standards Association of Australia without amendment and given an SAA symbol number.

Any of the standards listed above may be borrowed from the Library of the American Standards Association by ASA members.

Standards for Motor Vehicle Light and Signaling Equipment

Two Commercial Standards for light and signaling equipment for motor vehicles to be installed by the owner of the vehicle have recently been published, according to the November issue of the *Technical News Bulletin*. The standards set forth test methods and requirements and the accepted procedure for the marking and labeling of "Clearance, Marker, and Identification Lamps for Vehicles (After Market)" and "Electric Tail Lamps for Vehicles (After Market)".

The chief purpose of the standards is to provide a basis for the voluntary certification and labeling of these devices to enable the purchaser to distinguish equipment which complies with the specifications from that which does not. The standards are applicable particularly to lights and signals which are applied to the vehicle by the user, and do not include genuine replacements of original equipment.

According to a statement by the National Bureau of Standards it is expected that the regular labeling of items which comply with these standards will result in a very material improvement in the quality of equipment, will reduce accidents, and will ultimately make for greater uniformity in state and national regulations.

These standards will become effective for new production on January 1, 1941, and the price at which copies can be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C. is five cents each.

ASA Approves Revisions On Tests for Pigments

Revisions of six American Standard Specifications and Methods of Test for pigments, prepared by committees of the American Society for Testing Materials, were submitted to the American Standards Association following action by the ASTM at its annual meeting. These six revised standards have now been approved by the ASA as American Standards as follows:

Mineral Iron Oxide (K25-1940; ASTM D 84-40)
Chrome Yellow (K27-1940; ASTM D 211-40)
Reduced Chrome Green (K28-1940; ASTM D 213-40)
Prussian Blue (K29-1940; ASTM D 261-40)
Reduced Para Red (K31-1940; ASTM D 264-40)
Chrome Oxide Green (K37-1940; ASTM D 263-40)

In addition to approval of these revised standards, the American Standard Specifications for Ultramarine Blue (K30-1937; ASTM D 262-28) were withdrawn at the request of the American Society for Testing Materials because the standard has been superseded by new tentative specifications which may later be submitted to the ASA for approval.

Copies of the approved standards may be ordered from the American Standards Association, 29 West 39 Street, New York at 25 cents each.

Stoddard Solvent and Spray Oils Among Tests Approved by ASA

Two new standards, one a test to determine the amount of unsulfonated residue of plant spray oils and the other covering specifications for Stoddard solvent used in dry cleaning, were submitted recently to the American Standards Association and approved, together with a group of revised American Standards for petroleum products. The standards were submitted by the American Society for Testing Materials as sponsor for the ASA Sectional Committee on Petroleum Products and Lubricants (Z11), which cooperates closely with ASTM Committee D-2.

The American Standard Specifications for Stoddard Solvent (Z 11.42—1940; ASTM D 484-40) include the same technical requirements as the Commercial Standard for Stoddard Solvent, CS 3-40, just promulgated by the National Bureau of Standards. It includes requirements for material, appearance, color, odor, corrosive properties, doctor test, absorption in sulphuric acid, flash point, distillation range, residue, acidity, and methods of sampling, inspection, and test.

The American Standard Method of Test for Unsulfonated Residue of Plant Spray Oils (Z 11.41—1940; ASTM D 483-40) specifies the special solutions required for the test, the apparatus used, the procedure to be followed, and the precautions to be taken in making the test. Results of the test should agree within 1.0 per cent unsulfonated residue based upon the original sample, the standard provides. Determinations by different operators should agree within 2.0 per cent.

The revised American Standards, just approved by the American Standards Association on recommendation of the ASTM, are:

Method of Test for Distillation of Gasoline, Naptha, Kerosene, and Similar Petroleum Products (Z11.10-1940; ASTM D 86-40)

Method of Test for Distillation of Natural Gasoline (Z11.11-1940; ASTM D 216-40)

Method of Test for Flash Point by Means of the Pensky-Martens Closed Tester (Z11.7-1940); ASTM D 93-40)

Methods of Analysis of Grease (Z11.16-1940; ASTM D 128-40)

Method of Test for Water in Petroleum Products and Other Bituminous Materials (Z11.9-1940; ASTM D 95-40)

Method of Test for Water and Sediment in Petroleum Products by Means of Centrifuge (Z11.8-1940; ASTM D 96-40)

Method of Test for Precipitation Number of Lubricating Oils (Z11.30-1940; ASTM D 91-40)

Three test methods formerly approved by the American Standards Association as American Tentative Standard were withdrawn at the request of the American Society for Testing Materials. This action was taken because the American Standards Association recently eliminated the status of American tentative standard, and these standards in the opinion of ASA Committee Z11 are not yet ready to be approved as standard. The three standards withdrawn are:

Method of Test for Sulfur in Petroleum Oils by Lamp Method (Z11.38-1935; ASTM D 90-34)

Method of Test for Color of Lubricating Oil and Petrolatum by Means of ASTM Union Colorimeter (Z11.34-1939; ASTM D 155-39 T)

Method of Test for Neutralization Number of Petroleum Products and Lubricants (Z11.12-1928; ASTM D 188-27 T)

Copies of the approved standards may be ordered from the American Standards Association at 25 cents each. The 1940 Report of Committee D-2 on Petroleum Products and Lubricants and Methods Relating to Petroleum Products also includes all these standards, as well as other standard tests and specifications for petroleum products. This book, which is a compilation of all standards developed by ASTM Committee D-2 and includes a summary of this committee's activities, is available from the American Society for Testing Materials, 260 S. Broad Street, Philadelphia, at $2.00 per copy.

Glass Jars of Recommended Sizes Used for Mayonnaise Products

Ninety-eight per cent of the volume of production of mayonnaise and kindred products in 1939 was packed in glass containers of the sizes shown in Simplified Practice Recommendation R131-35, Glass Containers for Mayonnaise and Kindred Products, according to an announcement recently by the National Bureau of Standards. The sizes are: 4, 8, 16, 32, and 128 fluid ounces.

The initial list of recommended sizes was made effective January 1932 and was revised three years later. The 1935 edition has just been reviewed by the Standing Committee responsible for regularly reviewing the recommendation. It was decided to reaffirm it without change.

Printed copies of the recommendation may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. for five cents each.

British Publish Screw Thread Standards

Tables of basic sizes and tolerances for British Standard Fine Screw Threads and British Standard Whitworth screw threads have been compiled by the British Standards Institution in one document, British Standard Specification for Screw Threads of Whitworth Form, BS84-1940. The standard also includes British Standard pipe parallel threads where, on account of their relatively fine pitches, they are used for general engineering purposes as distinct from ordinary pipe joints. In addition, for the first time, series of recommended tolerances for all other Whitworth form threads having any reasonable combination of diameter, pitch, and length of engagement are provided. The standard supersedes BS 84-1918, British Standard Fine Screw Threads and their Tolerances and BS 92-1919, British Standard Whitworth Screw Threads and their Tolerances.

Little-Used Sizes Eliminated

In the new standard, little used sizes in the table of sizes up to 6 in. have been eliminated, but two other small sizes of threads which have been found to be extensively used have been included. These are the thread sizes 1/8 in. by 40 threads per inch and 3/16 in. by 24 threads per inch in the British Standard Whitworth series. Similarly, the 3/16 in. by 32 threads per inch thread has been added to the British Standard Fine table of basic sizes, which is now extended to 4 1/4 in.

Tables of limits and tolerances are provided for the British Standard Whitworth, British Standard Fine and British Standard Pipe (parallel thread) series in three grades of accuracy described respectively as Close, Medium, and Free Fits. These tolerances are on a different basis from those which appeared in the earlier specifications.

In the general formula now used as a basis for the effective diameter tolerances, the formula adopted takes account of the diameter of the thread, and its length of engagement as well as its pitch, whereas the tolerances had formerly been based solely upon the pitch of the thread, the BSI announces. The actual values of the diameter tolerances are, however, closely comparable with the corresponding tolerances given in the previous specifications for the British Standard Whitworth and British Standard Fine series. This applies also to the new tolerances on the major and minor diameters of the bolts. On the other hand, a substantial increase has now been made in the tolerances for the minor diameters of the nuts, as their former values had been found to be inadequate for general production purposes. "The larger tolerances permit of the use of tapping drills of ample size for facilitating tapping and minimizing the risk of tap breakage, particularly on the smaller sizes of threads," the BSI explains.

British Standard Whitworth and British Standard Fine screw threads made to the new limits and tolerances will be interchangeable with those made to the old specifications.

Recommendations for the use of gauges for controlling threads of Whitworth form between the limits laid down in the standard are given in an Appendix.

Question Changeover in Emergency

The British Standards Institution recommends to those planning to use the new standard that they consider whether the changeover may cause difficulty either in production or gauging during the period of the war and make arrangements accordingly.

British Standard Specification for Screw Threads of Whitworth Form, BS 84-1940, may be borrowed from the American Standards Association.

Recommendation for Beverage And Food Containers in Print

The Division of Simplified Practice of the National Bureau of Standards has announced that Simplified Practice Recommendation R175-40 for Heavy-Duty, Round, Nesting, Paper, Food and Beverage Containers and Lids is now available in printed form.

This simplified list of recommended containers includes standard types, shapes, capacities, weight per 1000 containers (waxed and unwaxed), maximum depth of lid seat, and maximum bottom recess. Standard weight of paper for different types of lids is also included.

Copies of R175-40 may be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C. at the price of five cents each.

ASTM Publishes Petroleum Standards

Sixty-five standardized methods of testing, ten specifications, and two lists of definitions of terms comprise the latest (October, 1940) edition of the compilation of ASTM Standards on Petroleum Products and Lubricants.

Issued annually, this volume is sponsored by Committee D-2 on Petroleum Products and Lubricants of the American Society for Testing Materials. The latest report of the committee is given, showing detailed changes on some 18 standards including those approved by the American Standards Association (see page 296). Also included are three proposed new methods published for information and comment covering tests for neutralization number, aniline point, and for ignition quality (Diesel fuels).

New standards published in the compilation for the first time provide tests for carbonizable substances in white mineral oil (liquid petrolatum) (D 565—40T), dropping point of lubricating grease (D 566—40 T), and the method for calculating viscosity index (D 567—40 T).

This compilation, widely used throughout the petroleum industry and by those who are using petroleum products, is a compact convenient laboratory guide and is used for many purposes, the ASTM announces.

Copies of the publication in heavy paper cover can be obtained from the American Society for Testing Materials, 260 S. Broad Street, Philadelphia, Pa., at $2.00 each. Special prices are in effect for ten or more copies.

British Propose Standard For Precision Levels

A British draft standard has been prepared for precision levels, under the authority of the Mechanical Industry Committee of the British Standards Institution, as the result of a request from the Institution of Production Engineers. It is one of a series of specifications being prepared for engineers' precision tools, the BSI announces, and was prepared with the cooperation of the manufacturers and in collaboration with the National Physical Laboratory.

Can Be Used for Testing

The levels covered in the draft can be used not only for general levelling but also for testing the flatness of surfaces by the method outlined in Appendix B of British Standard 817 for cast-iron surface plates and tables.

For precision workshop and inspection purposes, three types of levels are recommended: (1) a block level with a continuous hardened and lapped base of steel. This type of level is usually made about 8 inches long. (2) a Block level with a cast-iron or brass base formed with pads at the two ends, the center being relieved. The pads on the base of this type of level may either be flat transversely or be finished with a longitudinal V-groove for use on cylindrical surfaces. This type of level is usually made with a length of base of 9, 12, or 18 inches. (3) A square block level of cast iron. In this type of level all faces may be flat transversely, or, alternatively, the base and one vertical face may be finished with longitudinal V-grooves for use on cylindrical surfaces. This type of level is usually made about 8 inches square.

The draft standard recommends that the scales must be divided in 1/10 divisions.

The sensitivities recommended for general precision workshop and inspection purposes are as follows:

Type 1: 0.00025-inch per 10 inches (5 seconds)
Type 2: 0.0005-inch per 10 inches (10 seconds), or 0.001-inch per 10 inches (20 seconds)
Type 3: 0.0005-inch per 10 inches (10 seconds), or 0.0015-inch per 10 inches (20 seconds)

Each level must incorporate a means of adjusting to zero. When the level is placed on a truly horizontal surface, it must be possible to adjust the two ends of the bubble to give equal readings on the scale to within one-tenth of a division.

Determines Length of Bubble

At the standard reference temperature of 68 F. the length of the bubble must be equal to the distance between the center lines of the scales to within one-half of a division.

When tested on a tilting table, readings being taken at each division at each end of the bubble, each level must comply with the following limits of error: the average sensitivity (*i.e.*, the average value of one division) must not differ from the value marked on the level by more than plus or minus 10 per cent; the maximum deviation of the value of any one division from the average value must not exceed 0.1 division.

283 Cities Have Now Adopted Pacific Coast Building Code

Twenty-four additional cities have adopted the Uniform Building Code of the Pacific Coast Building Officials' Conference, bringing the total number to 283, and 45 others are considering its adoption, according to a report in *Building Standards Monthly*, September, 1940. The State of Indiana is also working on a proposed draft of the Uniform Building Code to apply in all cities and unincorporated areas throughout the state, the *Monthly* reports. Cities which have just adopted the Uniform Code are located in Arizona, California, Idaho, Indiana, New Mexico, North Dakota, Oregon, Pennsylvania, and Virginia.

The Conference is entering its twentieth year of activity with a new edition of the Uniform Building Code and a new Constitution and By-laws, it announces.

Plans for closer cooperation between the Pacific Coast Building Officials Conference and the Building Code Correlating Committee of the American Standards Association were discussed at a meeting of the Executive Committee of the BCCC October 4. Hal Colling, secretary of the Pacific Coast Building Officials, was present at the meeting.

Hal Colling of the Pacific Coast Building Officials Conference visits with officers of the ASA Building Code Correlating Committee. *(Left to right)*—H. M. Lawrence, secretary, BCCC; J. H. Courtney, technical secretary; Mr. Colling; Rudolph P. Miller, chairman, BCCC; George N. Thompson, vice-chairman.

Flow Nozzle Research May Lead to Standards

For over five years the Special Research Committee on Fluid Meters of the American Society of Mechanical Engineers has conducted a research program on flow nozzles. A discussion of the problem and the relations of the research under way to activities in the International Standards Association were given in an article in Industrial Standardization, June 1937, page 161. Since that time a comprehensive research program has been carried out at the National Bureau of Standards and a number of cooperating laboratories.

As is noted in the article mentioned above, American industry has been cooperating through the American Standards Association in the work of a technical committee on Flow Measurement of the International Standards Association. The American representative is W. A. Carter of the Detroit Edison Company.

Early this year the tests for determining nozzle discharge coefficients were completed. In correlating the results, attempts to apply analytical methods were unsuccessful, and an entirely graphical procedure was found to be the only practical one.

The value of the discharge coefficient of a flow nozzle depends upon the ratio of the nozzle throat diameter to the pipe diameter, the character of the fluid flow as defined by the Reynolds number, and to a slight extent upon the absolute size of the metering element as determined by the diameter of the pipe in which the nozzle is used.

The correlation of the data obtained in order to arrive at discharge coefficients of flow nozzles has received careful attention. Three members of the subcommittee which has directed the flow nozzle research have made separate analyses.

The results of these studies of the data have been compared and averaged, and the averaged results, in the form of curves, will be presented at the annual meeting of the American Society of Mechanical Engineers in December. These coefficient curves apply to flow nozzles in pipes 2-inches in diameter and larger, when used with pressure connections located one pipe diameter preceding and one-half pipe diameter following the cross-section plane determined by the nozzle inlet, for the diameter ratio range from 0.2 to 0.85, and a Reynolds number range, based on the nozzle throat diameter, from 50,000 to 5,000,000.

From the standpoint of commercial use, the range at conditions covered by these curves is the most useful. However, the test data obtained by the committee extend to nozzle throat Rey-

nolds numbers as low as 40 and for corner pressure connections also. Therefore, in later reports analyses will be presented covering the entire range of conditions for which there are test data. Tabulated summaries of the test results will also be given.

In connection with the study at the National Bureau of Standards of discharge coefficients of flow nozzles, a micromanometer was developed for measuring the differential pressure produced by the nozzles in a water pipe line at low flows. Existing designs were found unsuitable because of limited range, or because they employ glass observation tubes of relatively small diameter, in which chemical cleanliness is essential.

The newly developed micromanometer is a water-filled inverted U-tube manometer utilizing pointer gages to locate the water surfaces. A paper giving a description of this and another manometer has been sent to the magazine *Instruments*. In addition, details of the instrument and its method of operation may be obtained by writing to the National Bureau of Standards, Washington, D. C.

ASTM Compiles Cement Standards In Single Volume, Just Issued

All of the specifications and test methods issued by the American Society for Testing Materials covering cement are included in the 1940-1941 compilation of *ASTM Standards on Cement*, just published. Each is given in its latest form. Various changes made in the standards during the year are included, also new tentative specifications covering five types of portland cement (C 150—40 T), and the newly standardized test for autoclave expansion (C 151—40 T).

Other specifications cover portland (C 9—38), high-early-strength portland, natural, and masonry cements, and sieves for testing purposes. Testing procedures include chemical analysis, sampling and physical testing (including a Manual of Cement Testing and Selected References on Portland Cement). Other standards pertain to the compressive strength of portland-cement mortars, and the fineness of portland cement by means of the turbidimeter.

Copies of the 107-page publication in heavy paper cover can be obtained from the American Society for Testing Materials, 260 S. Broad Street, Philadelphia, Pa., at $1.00 per copy.

Utter Is Local Manager For ASA in Cleveland

Richard I. Utter, manager of the Cleveland Engineering Society, has been named by the American Standards Association to act as the ASA local representative in Cleveland. As ASA representative Mr. Utter will have available a complete file of approved American Standards and will keep the engineering and industrial organizations of Cleveland informed concerning ASA activities.

Mr. Utter reports that the American Standards are kept available at the headquarters of the Cleveland Engineering Society in three-ring binders, and that the standards are consulted frequently.

Wallace Named by Tool Engineers On Surface Quality Committee

D. A. Wallace, president, Chrysler Sales Division, Chrysler Corporation, has been appointed the representative of the American Society of Tool Engineers on the ASA committee dealing with the classification and designation of surface qualities (B46). This is one of the appointments of members made by the ASTE, which organization recently became a member-body of the ASA. Mr. Wallace's appointment is particularly interesting in view of the development of the method of super-finish by the Chrysler Corporation in recent years.

C. W. Whitney

C. W. Whitney, Executive Secretary of the Purchasing Agents' Association of Northern California, and local representative of the American Standards Association in San Francisco, died in August of this year. Mr. Whitney's service to the ASA was outstanding. He made available the material which he received from the ASA office to members of the Purchasing Agents' Association, and also brought the work of the ASA to the attention of many other groups in the Pacific Coast region.

New EEI–NEMA Tests Will Show Performance of Electric Ranges

STANDARD specifications and tests, to make it possible to determine performance of household electric ranges, have just been established by a joint committee of the Edison Electric Institute and the National Electrical Manufacturers Association. Safety, effectiveness, durability, and convenience are the qualities which the work of the committee is intended to help determine.

The work was undertaken at the suggestion of the Edison Electric Institute which asked NEMA to cooperate in the development of specifications covering those features of electric ranges which affect the service given by the power companies. This involves, among other things, the terminal arrangements of an electric range, the balancing of the load between the two sides of the three-wire service, the name-plate marking, and the voltage rating of the elements. After the work was started, definitions and methods of test were also added to the committee's program.

Construction details were not included, however, and very few limits of performance and durability are given. This is due to the rapid development in design of electric ranges, NEMA explains, which convinced the committee that it would be unwise to establish too many details of construction or performance in any standard in case they might hamper future development.

The provisions for safety refer to the Underwriters' Laboratories' standard for electric ranges, and include requirements for surface temperatures, insulation resistance, and temperature requirements for all parts of the range.

Performance tests cover speed and efficiency of surface units, cooker, ovens, temperature control, warming compartment, and outline actual cooking tests for both surface unit and oven. Durability tests cover surface units, switches, oven, thermostat, oven door, and finishes. Structural Tests are included for the cooking top or work surface, the oven door, oven lining and vent system, shelf, drawer, and the complete range. A list of questions to be answered by the inspection agent is also to be included in the report on the examination of the range.

Publication of these specifications it is expected will enable manufacturers to base their judgment regarding future developments upon uniform test methods, the National Electrical Manufacturers' Association declares.

New Manual Gives Information For Motor Vehicle Inspection

THE National Conservation Bureau and the American Association of Motor Vehicle Administrators have published a Manual of Motor Vehicle Inspection for use by states and municipalities which are considering establishment of motor vehicle inspection programs. These organizations have the responsibility for the administrative leadership of the ASA project on Inspection Requirements for Motor Vehicles. The Manual is designed for the guidance of supervisors, inspectors, garage owners, and others concerned with the inspection problem. Its six chapters cover the development of motor vehicle inspection; legislation; state and municipally owned and operated stations, which includes sections on organization and administration, personnel, record systems, etc.; state-appointed stations; the combination of state-owned and state-appointed inspection program; and the approved code of Standard Inspection Requirements for Motor Vehicles.

This Code, which is the American Standard Inspection Requirements for Motor Vehicles, approved by the American Standards Association in 1939, is reprinted in the Manual. The Code, which sets minimum standards for safe performance of motor vehicles, and "goes a long way toward promoting uniformity in methods and standards of inspection," is "one significant milestone in the movement for periodic inspection," according to the Manual.

"The value of regular inspection of motor vehicles to test their mechanical fitness for use on the public highway is recognized widely today," the Foreword to the Manual declares. "In the short period of thirteen years the movement for such examinations has become firmly rooted. It it significant to note that more than 8,500,000 motor vehicles are inspected from one to four times a year in the seventeen states and fifteen cities which conduct periodic inspections. The sponsors of this Manual and the members of many other national organizations hope and believe that systematic testing of motor vehicles will

continue to expand as a standard part of the nation-wide traffic safety program. . . .

"With the aid of this Manual, it is believed, officials will be able better to organize and to operate an inspection program economically and efficiently. It is realized that all the points in this Manual will not apply equally in every jurisdiction. Nevertheless it is hoped that the fundamental principles and methods outlined will be followed so far as practicable, for only thus may be attained the uniform standards of motor vehicle inspection essential to safe and efficient automobile travel."

The Motor Vehicle Inspection Manual may be ordered from the American Association of Motor Vehicle Administrators, Washington, D. C., or from the National Conservation Bureau, 60 John Street, New York, at 50 cents per copy.

Australian, British, And New Zealand Draft Standards

Members of the American Standards Association may borrow copies of the following draft standards which have just been received by the Library of the American Standards Association.

Australia

Electrical Performance of Industrial Electric Motors and Generators, with Class A Insulation (To be No. C 34-1940)

Design, Location, Erection and Use of Road Signs for the Guidance and Regulation of Traffic, Draft Revision of (To be No. CE 1-)

Grading Rules for Unseasoned Dressing Quality Sawn Timber (To be No. O 55, Part I)

Grading Rules for Milled Lining and Milled Weatherboards (To be No. O 4, Part II and No. O 5, Part II)

Great Britain

Spectacle Type Goggles for Protection against Flying Particles CF (PSM) 6764

Dimensions, Limits, and Tolerances for Taps CF (ME) 6802

Brass Die-Castings CF (NF) 6547

New Zealand

Sequence of Trade Headings and Specification Items for Building Work (No. D 1390)

Ceiling Roses Made of Synthetic Resin Mouldings for Use on 250-volt Circuits (No. D 1394)

Comments on the Australian draft standard for milled lining and milled weatherboards and for unseasoned dressing quality of sawn timber may be received at the Standards Association of Australia until February 28, 1941. The American Standards Association will be glad to forward any comments to the Australian standardizing body.

NEMA Analyzes 1940 Changes In National Electrical Code

An analysis of the changes in the 1940 edition of the National Electrical Code, which was approved in September by the American Standards Association, has been published by the National Electrical Manufacturers Association. The booklet is not an interpretation of the Code or the changes.

The Code itself is prepared and revised by a sectional committee organized under the procedure of the American Standards Association and working under the leadership of the National Fire Protection Association.

The booklet analyzing the 1940 edition was compiled by A. B. Smith, and is available from the National Electrical Manufacturers Association, 155 East 44th Street, New York, at 25 cents per copy. Special prices are available for copies used for educational purposes and for quantity lots.

ASA Consumer Committee Hears Subcommittee Reports

At the meeting of the Advisory Committee on Ultimate Consumer Goods held in New York on October 15, progress reports from several subcommittees were presented, and recommendations to the Standards Council on the approval of several standards were made.

A preliminary report on a survey for test methods for consumer goods was submitted by Dr. Jules Labarthe, Jr., chairman of the subcommittee. The work so far is confined to tests that will help to determine serviceability of textiles. It is hoped that the work of this subcommittee will eventually indicate directions for profitable research looking toward adequate standards for further test methods.

The ACUCG, following a study by a subcommittee, voted to recommend that the ASA Standards Council approve the ASTM standard methods for testing tubular sleeving and braids (ASTM:D 354-36). Recommendations on the approval of commercial standards for sun glasses (CS78-39 and CS79-39) were deferred because these standards are now under revision.

In addition to reports on standards, the ACUCG received a report from the subcommittee on personnel which recommended that the American Hospital Association and the Educational Buyers Association be invited to become members of the committee. Many of the materials used by members of these organizations are the same as those purchased by ultimate consumers, it was explained.

ASA Standards Activities

Approved Standards Available Since Publication of Our October Issue

Specifications for Mineral Iron Oxide (Revision of K25-1937) American Standard K25-1940 25¢

Specifications for Chrome Yellow (Revision of K27-1937) American Standard K27-1940 25¢

Specifications for Reduced Chrome Green (Revision of K28-1937) American Standard K28-1940 25¢

Specifications for Prussian Blue (Revision of K29-39) American Standard K29-40 25¢

Specifications for Reduced Para Red (Revision of K31-1939) American Standard K31-1940 25¢

Specifications for Chrome Oxide Green (Revision of K37-1937) American Standard K37-1940 25¢

Method of Test for Flash Point by Means of the Pensky-Martens Closed Tester (Revision of Z11.7-1936) American Standard Z11.7-1940 25¢

Method of Test for Water and Sediment in Petroleum Products by Means of Centrifuge (Revision of Z11.8-1935) American Standard Z11.8-1940 25¢

Method of Test for Water in Petroleum Products and Other Bituminous Materials (Revision of Z11.9-1930 American Standard Z11.9-1940 25¢

Method of Test for Distillation of Gasoline, Naptha, Kerosine and Similar Petroleum Products (Revision Z11.10-1938) American Standard Z11.10-1940 25¢

Method of Test for Distillation of Natural Gasoline (Revision of Z11.11-1939) American Standard Z11.11-1940 25¢

Methods of Analysis of Grease (Revision of Z11.16-1937) American Standard Z11.16-1940 25¢

Method of Test for Precipitation Number of Lubricating Oils (Revision of Z11.30-1935) American Standard Z11.30-1940 25¢

Method of Test for Knock Characteristics of Motor Fuels (Revision of Z11.37-1939) American Standard Z11.37-1940 25¢

Method of Test for Unsulfonated Residue of Plant Spray Oils American Standard Z11.41-1940 25¢

Specifications for Stoddard Solvent American Standard Z11.42-1940 25¢

Specifications for Gypsum Plasters (Revision of A49.3-1939) American Standard A49.3-1940 25¢

Specifications for Gypsum Molding Plaster (Revision of A49.4-1933) American Standard A49.4-1940 25¢

Specifications for Gypsum Pottery Plaster (Revision of A49.5-1933) American Standard A49.5-1940 25¢

Specifications for Carbon-Steel Castings for Valves, Flanges, and Fittings for High-Temperature Service (Revision of G17.1-1936) American Standard G17.1-1940 25¢

Specifications for Forged or Rolled Steel Pipe Flanges for High-Temperature Service (Revision of G17.3-1939) American Standard G17.3-1940 25¢

Method of Sampling Coal for Analysis (Revision of XI-1921 American Standard K46-1940 25¢

Methods of Laboratory Sampling and Analysis of Coal and Coke (Revision of K18-1937) American Standard 25¢

Standards Now Being Considered by Standards Council for ASA Approval

Keyways for Holes in Gears B6.4

Cast-Iron Pipe Flanges and Flanged Fittings, Class 250 (Revision of B16b-1928)

Addendum B16e4 to American Standard Steel Pipe Flanges and Flanged Fittings, B16e-1939

Steel Butt-Welding Fittings B16.9

Welded and Seamless Steel Pipe (Revision of B36.1-1936)

Lap-Welded and Seamless Steel Pipe for High-Temperature Service (Revision of B36.3-1939)

Electric Fences, Part 6 of the National Electrical Safety Code C2, Part 6

Protection of Structures Containing Inflammable Liquids and Gases—Part 3 of Code for Protection Against Lightning (From status as American Tentative Standard to American Standard) C5, Part 3

A-C Power Circuit Breakers C37.4

Methods for Determining the Rms Value of a Sinusoidal Current Wave and a Normal Frequency Recovery Voltage C37.5

Schedule of Preferred Circuit-Breaker Ratings C37.6

Operating Duty for Standard and Reclosing Service C37.7

Rated Control Voltages C37.8

Test Code for Oil Circuit Breakers C37.9

Commercial Standards for Sun Glass Lenses (CS 78-39; CS 79-39)

Methods of Testing and Tolerances for Tubular Sleeving and Braids (ASTM D 354-36) L13

Proposed American Recommended Practice for the Use of Explosives in Anthracite Mines M27

Motion Picture Standards Z22.2 through Z22.33

Drafts Available

Proposed American Standard Safety Code for Cranes, Derricks and Hoists B30

Proposed American Standard Safety Code for Jacks B30

Proposed American Standard Allowable Concentrations of Nitrous Gases Z37

New Projects Being Considered

Application of Statistical Methods to Quality Control of Materials and Manufactured Products

Classification of Materials for Tools, Fixtures and Gages

Domestic Electric Flat Irons

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See article page 277

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